

AMENDMENTS TO THE CLAIMS

1-48. (canceled)

49. (previously presented): A method for manipulating magnetic microparticles, comprising the steps of:

- a) providing an electromagnetic chip comprising one or more micro-electromagnetic units on or within or partially within said electromagnetic chip;
- b) contacting a sample comprising magnetic microparticles with said electromagnetic chip; and
- c) moving said magnetic microparticles from a first locus on said electromagnetic chip to a second locus on said electromagnetic chip by way of modulating electric currents applied to one or more of said micro-electromagnetic units so as to change the magnetic field distribution of said electromagnetic chip, thereby altering magnetic forces acting on said magnetic microparticles.

50. (previously presented): The method of claim 49, wherein said magnetic microparticles comprise at least one moiety linked to said magnetic microparticles.

51. (previously presented): The method of claim 50, wherein said moiety is linked to said magnetic microparticle through linkage molecules, a covalent bond or biological affinity.

52. (original): The method of claim 50, wherein said moiety is selected from the group consisting of nucleic acid molecules, DNA, RNA, polypeptides, proteins, carbohydrates, lipids, prokaryotic cells, eukaryotic cells, prions, viruses, parasites, antibodies, lectins or receptors.

53. (previously presented): The method of claim 49, wherein said electromagnetic chip comprises a magnetophoretic device.

54. (previously presented): The method of claim 49, wherein said electromagnetic chip comprises switching means.

55. (previously presented): The method of claim 49, wherein said electromagnetic unit comprises a core that comprises at least one terminal structure.

56. (original): The method of claim 49, wherein said electromagnetic chip comprises dips.

57. (previously presented): The method of claim 49, wherein at least one of said one or more micro-electromagnetic units is in a substantially horizontal configuration.

58. (previously presented): The method of claim 49, wherein at least one of said one or more micro-electromagnetic units is in a substantially vertical configuration.

59. (previously presented): A method for manipulating magnetic microparticles, comprising the steps of:

a) providing an electromagnetic chip comprising a plurality of micro-electromagnetic units on or within or partially within said electromagnetic chip;

b) contacting a sample comprising magnetic microparticles with said electromagnetic chip; and

c) moving said magnetic microparticles from a first locus on said electromagnetic chip to a second locus on said electromagnetic chip by way of modulating electric currents applied to two or more of said micro-electromagnetic units so as to change the magnetic field distribution of said electromagnetic chip, thereby altering magnetic forces acting on said magnetic microparticles.

60. (previously presented): The method of claim 59, wherein said magnetic microparticles comprise at least one moiety linked to said magnetic particle.

61. (previously presented): The method of claim 60, wherein said moiety is linked to said magnetic microparticle through linkage molecules, a covalent bond or biological affinity.

62. (previously presented): The method of claim 60, wherein said moiety is selected from the group consisting of nucleic acid molecules, DNA, RNA, polypeptides, proteins,

carbohydrates, lipids, prokaryotic cells, eukaryotic cells, prions, viruses, parasites, antibodies, lectins or receptors.

63. (previously presented): The method of claim 59, wherein said electromagnetic chip comprises a magnetophoretic device.

64. (previously presented): The method of claim 59, wherein said electromagnetic chip comprises switching means.

65. (previously presented): The method of claim 59, wherein said electromagnetic units comprise a core that comprises at least one terminal structure.

66. (previously presented): The method of claim 59, wherein said electromagnetic chip comprises dips.

67. (previously presented): The method of claim 59, wherein at least one of said plurality of micro-electromagnetic units is in a substantially horizontal configuration.

68. (previously presented): The method of claim 59, wherein at least one of said plurality of micro-electromagnetic units is in a substantially vertical configuration.